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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,540	01/22/2008	Sofia Patricia Becerra	NIHA-0238	5917

45160 7590 06/24/2011

OTT- NIH  
c/o WOODCOCK WASHBURN LLP  
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PHILADELPHIA, PA 19104-2891

EXAMINER
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GUCKER, STEPHEN

ART UNIT	PAPER NUMBER
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1649

NOTIFICATION DATE	DELIVERY MODE
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06/24/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

coffice@woodcock.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/566,540	<b>Applicant(s)</b> BECERRA ET AL.
	<b>Examiner</b> STEPHEN GUCKER	<b>Art Unit</b> 1649

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-61 and 63 is/are pending in the application.
- 4a) Of the above claim(s) 2-5,7,9,11,13,23,27-52,54-61 and 63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,6,8,10,12,14-22,24-26 and 53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)<br>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)<br>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/22/07</u> . | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____.<br>5) <input type="checkbox"/> Notice of Informal Patent Application<br>6) <input type="checkbox"/> Other: _____. |
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### **DETAILED ACTION**

**1.** Applicant's election with traverse of Group II, drawn to a polynucleotide comprising SEQ ID NO:2, claims 1, 6, 8, 10, 12, 14-22, 24-26, and 53 in the reply filed on 4/25/11 is acknowledged. The traversal is on the ground(s) that WO 01/07628 ("Tang") fails to anticipate the instant invention. This is not found persuasive because of the U.S.C. 102(b) rejection set forth below.

The requirement is still deemed proper and is therefore made FINAL.

**2.** Claims 2-5, 7, 9, 11, 13, 23, 27-52, 54-61, and 63 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 4/25/11.

**3.** The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**4.** Claims 1, 6, 12, 14-22, 24-26, and 53 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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**5.** To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof.

In analyzing whether the written description requirement is met for genus claims, it is first determined whether a representative number of species have been described by their complete structure. The specification describes three mammalian species for the encoding sequence for PEDF-R (rat, mouse, and human). The Revised Interim Guidelines state:

"The claimed invention as a whole may not be adequately described if the claims require an essential or critical element which is not adequately described in the specification and which is not conventional in the art" (col. 3, page 71434), "when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus", "in an unpredictable art, adequate written description of a genus which embraces widely variant species cannot be achieved by disclosing only one species within the genus" (col. 2, page 71436).

An Applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997).

The instant claims are drawn to a broad genus of polynucleotide sequences that hybridize to the three described mammalian species, or that encode polypeptides much smaller than the three examples, or that encode polypeptides with only 60% or more sequence identity to the

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three examples, yet all with the functional, not structural, limitation requirement that the broad genus of polynucleotides encompassed by the claims encode a polypeptide having PEDF-R activity. The breath of the genus recited in the claims is not commensurate with the written description of the disclosure because the specification does not adequately describe sufficient members of the genus that would exemplify a representative number of species within the genus that would share common structural features that would bestow upon the various species the recited functional limitation. Furthermore, the specification does not provide adequate guidance or direction as to the critical core structural limitations possessed by a representative number of species for the broad genus.

*Vas-cath Inc. v. Mahurkar*, 19USPQ2d 1111, clearly states that Applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification should "clearly allow persons of ordinary skill in the art to recognize that (he or she) invented what is claimed." (See *Vas-cath* at page 1116).

The disclosure of a single species is rarely, if ever, sufficient to describe a broad genus, particularly when the specification fails to describe the features of that genus, even in passing. (see *In re Shokal* 113USPQ283(CCPA1957); *Purdue Pharma L.P. vs Faulding Inc.* 56 USPQ2nd 1481 (CAFC 2000). The three species set forth by the instant disclosure are not sufficient to describe the broad genus of PEDF-R polynucleotides from a significant number of different animal species variants, or allelic variants of such, or alternate splice variants of such, or man-made variants sharing only 60% sequence identity, etc.

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Possession may also be shown in a variety of ways including description of an actual reduction to practice, or by showing that the invention was "ready for patenting" such as by the disclosure of drawings or structural chemical formulas that show that the invention was complete, or by describing distinguishing identifying characteristics sufficient to show that the Applicant was in possession of the claimed invention. See, e.g., *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 68, 119 S.Ct. 304, 312, 48 USPQ2d 1641, 1647 (1998), *Regents of the University of California v. Eli Lilly*, 119 F.3d 1559, 1568, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997)\*, *Amgen, Inc. v. Chugai Pharmaceutical*, 927 F.2d 1200, 1206, 18 USPQ2d 1016, 1021 (Fed. Cir. 1991) (one must define a compound by "whatever characteristics sufficiently distinguish it").

Therefore, conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. See *Fiers v. Revel*, 25 USPQ2d 1602 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016. One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481, 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence. Without a correlation between structure and function, the claim does little more than define the claimed invention by function. That is not sufficient to satisfy the written description requirement. See *Eli Lilly*, 119 F.3d at 1568, 43 USPQ2d at 1406 ("definition by function ... does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is").

Thus, for the reasons outlined above, it is concluded that the claims do not meet the requirements for written description under 35 U.S.C. 112, first paragraph. Applicant is reminded

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that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

**6.** The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**7.** Claims 1, 6, 12, 14-22, 24-26, and 53 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are unclear because a polynucleotide that hybridizes to an encoding sequence, or is complementary to an encoding sequence, cannot itself encode a polypeptide having PEDF-R activity or be identical to that sequence (see claim 1(b) – (d) for an example of this language), because it is by definition an antisense or complementary sequence that does not encode any polypeptide.

Claim 6 recites a binding affinity that is vague due to a lack of proper units (10,000 of ? multiplied by the inverse of moles?) or how the affinity is determined if the units are somehow proper.

**8.** The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**9.** Claims 1, 6, 8, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by the

Mammalian Gene Collection (MGC) Program Team (PNAS, Vol. 99, 2002, pages 16899-

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16903). The MGC Program Team teach a sequence with accession #BC017280 (GI:16878146) which appears to comprise instant SEQ ID NO:2. Enclosed is the sequence for GI:16878146 and a sequence comparison generated between SEQ ID NO:2 and a later version of GI:16878146 (GI:33878107) because a sequence comparison could not be generated for the earlier prior art version. The later version clearly comprises SEQ ID NO:2, and it is believed that the earlier version also comprises SEQ ID NO:2, absent evidence to the contrary.

**10.** Claims 1, 6, 12, 14-22, 24-26, and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Tang (reference 364 of the IDS filed 1/22/07). SEQ ID NO:24 of Tang is 99.9% identical to instant SEQ ID NO:2 with only a single nucleotide mismatch between nucleotide 1528 (T) of Tang and nucleotide 1458 (C) of SEQ ID NO:2. SEQ ID NO:24 of Tang encodes a polypeptide (SEQ ID NO:9) 100% identical to the polypeptide encoded by instant SEQ ID NO:2, which is instant SEQ ID NO:3. Tang also discloses vectors and host cells and pharmaceutical compositions (abstract, page 64, and claims 1, 5, 6-7, 9, 11, and 16).

**11.** No claim is allowed.

**12.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Gucker whose telephone number is 571-272-0883. The examiner can normally be reached on Mondays through Fridays from 0930 to 1800.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ali Salimi, can be reached at 571-272-0909. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/S. G./

Examiner, Art Unit 1649

Stephen Gucker

June 20, 2011

/A R Salimi/

Acting SPE, Art Unit 1649

06/20/2011